NC/QC/YPD-BC/2018-19/GL-C1 Date: 18-03-2019

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).

{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}

Ref.: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	168 min	Shall not be less than 30 min
2	Final setting time	279 min	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	2.19 %	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	2.02 mm	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	28.41 N/Sq mm	Shall not be less than 27 N/Sqmm

AE-2 A.E.E

AE-02

KIRAN. R
M.E, (Civil-Engg)

For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL-PCC1 **Date: 18-03-2019**

1. TESTING OF COARSE AND FINE AGGREGATES:

Sub: Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
	40 mm Sample	Single size	Graded
40mm	100.00	85-100	90 – 100
20mm	66.85	0 -20	30- 70
10mm	23.10	0 -5	10- 35
4.75mm	4.25	------	0- 5

2. FINE AGGREGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -III	
04.75	99.30	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	86.95	60-95	75-100	85-100	
01.18	70.55	30-70	55-90	75-100	
600.mic	52.05	15-34	35-59	60-79	
300.mic	19.80	5-20	8-30	12-40	
150.mic	7.65	0-10	0-10	0-10	

AE-2 A.E.E

AE-02

KIRAN. R
M.E, (Civil-Engg)

For Newzen Consultants Bangalore

Proprietor

NC/QC/YPD-BC/2018-19/GL-C2 Date: 25-03-2019

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**181 min**	Shall not be less than 30 min
2	Final setting time	**262 min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**2.03 %**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**2.16 mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.97 N/Sq mm**	Shall not be less than 27 N/Sqmm

AE-2 A.E.E AE-02

K.R
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For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL-CA1 Date: 25-03-2019

1. TESTING OF COARSE AGGREGATES (20 mm):

Sub: Testing of Construction Materials.

{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}

Ref.: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

Table - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2002) % Passing	
	20 mm Sample	Single size	Graded
40 mm	100.00	100.00	100.00
20 mm	97.65	85-100	90 - 100
10 mm	41.90	0 - 20	25 - 55
4.75 mm	5.40	0 - 5	0 - 10

TABLE 1.2 :

SL No	Test conducted	Results	Requirements as per IS:383-1970 & Tests Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2002)
1.	Flakiness Index	24.59 %	Not to exceed 25 %
2.	Crushing value	27.14 %	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

A.E.E

KIRAN. P
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For Newzen Consultants Bangalore

Proprietor

NC/QC/YPD-BC/2018-19/GL-CB1 Date: 09-04-2019

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	02-04-19	09-04-19	07	22500	380	16.89	**17.19**
	002	"	"	"	"	385	17.11	
	003	"	"	"	"	395	17.56	

A.E.E

AE-02

KIRAN. R
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For Newzen Consultants Bangalore

Proprietor

NC/QC/YPD-BC/2018-19/GL-CB2A Date: 02-05-2019

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	03-04-19	02-05-19	29	22500	500	22.22	**22.15**
	002	"	"	"	"	490	21.78	
	003	"	"	"	"	505	22.44	

AE-2 A.E.E AE-02

K.R
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For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-GSB1 Date: 06-06-2019

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

1. Gradation Test:
TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	100.00	100
53.00	97.45	80-100
26.50	72.60	55-90
9.50	48.15	35-65
4.75	34.05	25-50
2.36	17.25	10-20
0.85	8.50	2-10
0.425	3.05	0-5

AE-2

AE-02

KIRAN. R
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For Newzen Consultants Bangalore

Date: 13-06-2019

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	27.91 %	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	28.48 %	Not more than 35.0 %
3.	Water absorption, %	0.38 %	Not more than 2.0 %
4.	Plasticity Index, %	NP	Not more than 6.0 %

AE-II
A.E.E

KIRAN. P
M.E. (Civil

AE-02

For Newzen Consultants Bangalore
Proprietor

Date: 15-06-2019

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS 383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	27.95 %	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	29.56 %	Not more than 35.0 %
3.	Water absorption, %	0.39 %	Not more than 2.0 %
4.	Plasticity Index, %	NP	Not more than 6.0 %

AE-2
A.E.E

KIRAN. R
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For Newzen Consultants Bangalore

Proprietor

NC/QC/YPD-BC/2018-19/GL2-W3 Date: 17-06-2019

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	100.00	100
45.00	95.95	95-100
26.50	---	-
22.40	66.20	60-80
11.20	51.00	40-60
4.75	35.90	25-40
2.36	17.65	15-30
0.600	10.40	8-22
0.075	3.30	0-5

AE-2
A.E.E

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AE-02

For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-W4 Date: 18-06-2019

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	100.00	100
45.00	97.80	95-100
26.50	---	-
22.40	65.20	60-80
11.20	51.35	40-60
4.75	34.20	25-40
2.36	22.40	15-30
0.600	10.70	8-22
0.075	3.65	0-5

AE-2
A.E.E

KIRAN. R
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AE-02

For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-BD1 Date: 22-06-2019

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 :

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**51.80^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**103.90 cm**	40
3.	Flash point	**242^0 C**	Minimum 220^0 C
4.	Softening point	**52.15^0 C**	Min. 47

AE-2
A.E.E

AE-01

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For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-DS1 Date: 27-06-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1215**	900
2	Marshall Flow at 60°C, mm.	**3.18**	2.0 - 4.0

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AE-2
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AE-02

For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-DBM2 Date: 26-06-2019

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}

Ref.: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	98.30	90-100
19.0	83.65	71-95
13.20	70.40	56-80
4.75	47.10	38-54
2.36	32.55	28-42
0.300	9.30	7-21
0.075	3.15	2-8

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AE-02

For Newzen Consultants Bangalore

Proprietor

NC/QC/YPD-BC/2018-19/GL2-DS3 Date: 28-06-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1256**	900
2	Marshall Flow at 60°C, mm.	**3.53**	2.0 - 4.0

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AE-2
A.E.E
AE-12

For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-DBM4 Date: 27-06-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53%**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	93.45	90-100
19.0	76.40	71-95
13.20	59.60	56-80
4.75	43.85	38-54
2.36	39.15	28-42
0.300	16.70	7-21
0.075	5.25	2-8

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A.E.E

For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-CB1 Date: 24-06-2019

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TABLE 1.1 :

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)-- 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**22.75 %**	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	**27.65 %**	Not more than 35.0 %
3.	Water absorption, %	**0.38 %**	Not more than 2.0 %
4.	Specific gravity	**2.62**	-------
5.	Soundness	**5.40 %**	Max. 12 % in Sodium Sulphate

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AE-2/6
A.E.E

For Newzen Consultants Bangalore
Proprietor

NC/QC/YPD-BC/2018-19/GL2-BC2

Date: 29-06-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.43 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	96.25	90-100
9.5	83.40	70-88
4.75	68.35	53-71
2.36	56.20	42-58
1.18	43.55	34-48
0.600	35.15	26-38
0.300	27.05	18-28
0.150	19.40	12-20
0.075	7.30	4-10

KIRAN. R
M.E. (Civil-Engg)

For Newzen Consultants Bangalore

Proprietor

AE-2
A.E.E

AE-02

NC/QC/YPD-BC/2018-19/GL2-BS3 Date: 01-07-2019

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements to Roads and Drains at J P Colony layout and Kenchenahalli Prakruthi Badavane in ward no-02 of Yelahanka Sub division.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.B.Ramesh, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1358**	900
2	Marshall Flow at 60°C, mm.	**3.43**	2.0 - 4.0

AE-2
A.E.E

AE-02

KIRAN. R
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For Newzen Consultants Bangalore
Proprietor